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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 20050310

Application Number: 09/631,413
Filing Date: August 03, 2000
Appellant(s): BERTHAUD, CHRISTOPHE

Joerg-Uwe Szipl
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/15/2204.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,184,871	Teres et al.	02-2001
6,137,479	Olsen et al.	10-2000

6,392,636 Ferrari et al. 05-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 1-5 and 7-8, 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teres et al U.S. Patent No. 6,184,871 in view of Olsen et al. U.S. Patent No. 6,137,479, and further in view of Ferrari et al U.S. Patent No. 6,392,636 for the reasons set forth below.

Claim 1:

(1) Teres teaches a watch including display means for at least one item of time related data and having an at least partially transparent outer element covering said display means or forming an outer portion of the display means, said watch including first control means being formed of a plurality of touch sensitive sensors with each touch sensitive sensor having a touch sensitive pad being at least partially transparent and the touch sensitive pads are supported at least partially by said outer element such that the display means are at least partially visible through the touch sensitive pads and the outer element, wherein the touch sensitive sensors are of the capacitive type and sensitive pads are formed by electrodes deposited underneath the outer element (See Teres figures 1-5; column 2-5).

(2) Teres is silent to the movement of cursor on a computer screen.

(3) The Olsen reference has taught a mouse watch 54 including display means for at least one item of time related data and having an at least partially transparent outer element covering the display means (figures 4-7, column 5, lines 65-67, column 6, lines 1-67, and column 7, lines 1-25). Olsen further teaches a mouse watch including control means for controlling the

movement of cursor on a computer screen and touch sensitive sensors are built into the mouse watch to provide the computer mouse functions, i.e., the mouse watch can be used to detect the cursor movement on the display screen 26 (see for example, column 5, lines 42-67, and column 6, lines 1-67, column 7, lines 1-25).

(4) It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporated the interface feature of Olsen into Teres's watch device for the control of a cursor on a display screen in accordance to the fingertip's movement because Teres suggests providing a watch device formed by a matrix of photoelectrical sensors arranged on the bottom surface of the glass for identifying a manual action by a finger on the surface of the watch device to create a variation of an electrical quantity (e.g., Teres the Abstract) and data output ports such as the write recognition device (Teres figure 4 and column 4) for collecting the output signal as a result of finger motion on the watch device of Teres and Olsen teaches data ports (Olsen figure 1) for collecting the output signal from the microprocessor as a result of finger motion on the watch device of Olsen. Olsen further discloses a computer interface so that the output signal of Teres can be carried over to the computer for the control of a cursor in a display device. Therefore, Teres's watch device may have incorporated the computer interface 38 of Olsen (Olsen figure 1 and Teres figure 4) to control a cursor of the display screen.

(5) One having the ordinary skill in the art would have been motivated to do this to control a cursor by a manual action on a surface formed by a finger.

(6) The newly amended claim 1 adds the limitation of "wherein it further includes means for detecting the speed of a user's finger over said outer element or the actuation frequency of successive sensors."

(7) The Olsen reference teaches in figures 4-5 a watch 54 as a pointing device having a display and controls like a conventional watch and a person wears it like a conventional watch. Sensors are built into the watch to provide the computer mouse functions. The Teres reference teaches a watch with means for detecting the activated sensor representing the greatest variation of electrical quantity comprising conversion means of the total capacity of the set of the fixed capacitor and the parasite capacitor of each capacitive sensor A to S into an output signal having a frequency proportional to this total capacity (column 3, lines 24-37).

(8) Although, Teres and Olsen is silent to detecting the speed of a user's finger over the outer element, Ferrari teaches a portable device having a display screen by providing an electrical output signal for selectively controlling movement of a cursor across the display screen. Ferrari further teaches capacitive sensing cells arranged in a row/column array top to produce output signals for control of cursor movement in both a row direction and an orthogonal column direction. Ferrari also teaches the horizontal and vertical direction such as the two X and Y array outputs being proportional to the zero and first moment of the 2-D pattern (column 11, lines 32-41 of the Ferrari reference). Therefore, Ferrari has taught that ratio between the movement of cursor and the path taken by a user's finger across an outer element is less at low speed or actuation frequency than at relatively high speed or actuation frequency (fingertips' movement speed).

(9) It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporated the additional means of cursor movement of Ferrari in the watch device of Teres and Olsen to control a cursor on a display screen in accordance to the fingertip's movement speed.

(10) One having the ordinary skill in the art would have been motivated to do this to provide a more sensitive or high precision control to the cursor movement across a display screen wherein the high precision control depends upon the variable means such as the acutation frequency of sensors on the pads by the user's fingertips.

For example, both Teres and Ferarri are related to touch sensitive sensors wherein Ferrari teaches the two X and Y array outputs being proportional to the zero and first moment of the 2-D pattern (column 11, lines 32-41 of the Ferrari reference) whileTeres suggests providing a watch device formed by a matrix of photoelectrical sensors arranged on the bottom surface of the glass for identifying a manual action by a finger on the surface of the watch device to create a variation of an electrical quantity (e.g., Teres the Abstract) and data output ports such as the write recognition device (Teres figure 4 and column 4) for collecting the output signal as a result of finger motion on the watch device. Therefore, photoelectrical sensors of Teres can be arranged in accordance to Ferarri's horizontal and vertical array of sensors with outputs being proportional to the zero and first moment of the 2-D pattern. As a result, the desired portable device having a display screen is formed by providing an electrical output signal for selectively controlling movement of a cursor across the display screen with the capacitive sensing cells arranged in a row/column array top to produce output signals for control of cursor movement in both a row direction and an orthogonal column direction (See Ferarri column 11, lines 32-41).

Moreover, Ferrari discloses in Fig.5A-5G, 6-7, and column 11 the actuaction frequency of sensors as the user's finger or fingertip actuates/deactuates on a plurality of sensors wherein the X and Y outputs depend upon the displacement and pressure of the user's finger or fingertip on the touch-sensitive pads. The actuation frequency of sensors depends upon the user's rate of

lifting/pushing sensors by a fingertip or moving the finger away/towards the sensors. Therefore, the cursor movement on a computer screen is controlled by the actuation frequency by the user's rate/speed/frequency of lifting/pushing a fingertip or a finger (fingertip's rate of movement).

Claim 2:

Claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "a watch crystal." The Teres/Olsen reference has taught an outer element such as the cover for the watch (see Teres figures 1-5; column 1-5; Olsen figures 4-7, column 6, lines 35-67 and column 7, lines 1-25). Furthermore, any conventional watch would require a cover to protect it from scratches, and the cover could be made from various materials including crystal as an outer element taught by Olsen in figures 4-5.

Claim 3:

Claim 3 recites all the limitations of claim 1 or 2 and adds the limitation of "first means is supported by the outer element." The Teres/Olsen reference has taught that the first means is supported by the outer element, i.e., the cover or surface for the watch as shown in figures 4-7 (Teres figures 1-5; column 1-5; Olsen column 6, lines 1-67 and column 7, lines 1-25).

Claim 4:

Claim 4 recites all the limitations of claim 1 or 2 and adds the limitation of "a part of sensitive pads is arranged in the top portion of the case." The Teres/Olsen reference has taught a cover of watch that protects sensors from scratches (Teres figures 1-5; column 1-5; Olsen column 6, lines 1-67 and column 7, lines 1-25).

Claim 5:

Claim 5 recites all the limitations of claim 1 and adds the limitation of "sensitive pads arranged in the shape of a matrix." The Teres and Olsen references have taught a watch with multiple sensors arranged to generate signals to control the position of the cursor on the display screen (Teres figures 1-5; column 1-5; Olsen column 6, lines 1-67 and column 7, lines 1-25). The Examiner interprets that an array of multiple sensors can be arranged in the shape of matrix.

Claim 7:

Claim 7 recites all the limitations of claim 1 and adds the limitation of "the ratio between the movement of cursor and the path." Teres/Olsen teaches all the limitations of claim 6. However, the references are silent on the additional limitation as recited in claim 7.

Ferrari teaches a portable device having a display screen by providing an electrical output signal for selectively controlling movement of a cursor across the display screen. Ferrari further teaches capacitive sensing cells arranged in a row/column array top to produce output signals for control of cursor movement in both a row direction and an orthogonal column direction. Ferrari also teaches the horizontal and vertical direction such as the two X and Y array outputs being proportional to the zero and first moment of the 2-D pattern (column 11, lines 32-41 of the Ferrari reference). Therefore, Ferrari has taught that ratio between the movement of cursor and the path taken by a user's finger across an outer element is less at low speed or actuation frequency than at relatively high speed or actuation frequency.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporated the additional means of cursor movement of Ferrari in the watch device of Teres/Olsen to control a cursor on a display screen in accordance to the

fingertip's movement speed. One having the ordinary skill in the art would have been motivated to do this to provide a more sensitive or high precision control to the cursor movement across a display screen.

Claim 8:

Claim 8 recites all the limitations of claim 5 and adds the limitation of "the movement of cursor corresponds to the path taken by the user's finger." Olsen in figures 4-7 further discloses the surface area of the watch to generate signals to control the position of the cursor on the display screen (Olsen column 6, lines 1-13). Since the user's finger can move upon the watch's surface area, the path taken by the user's finger corresponds to the cursor's movement across a display screen.

Claim 10:

The claim 10 is subject to the same rationale of rejection set forth in the claim 1 except additional claim limitations addressed below.

With regards to the limitation of "concentric zones," Olsen further discloses a mouse watch with cursor movements as claimed. See figures 4-5 and respective portions of the specification. Teres et al. further teaches a wristwatch device having concentric zones as shown in figure 3.

With regards to the limitation of "speed of movement of said cursor," Olsen discloses a mouse watch with cursor movements as claimed. See figures 4-5 and respective portions of the

specification. Teres et al. teaches a wristwatch device having concentric zones as shown in figure 3.

However, the references are silent to the speed of movement of said cursor.

Ferrari teaches a portable device having a display screen by providing an electrical output signal for selectively controlling movement of a cursor across the display screen. Ferrari further teaches capacitive sensing cells arranged in a row/column array top to produce output signals for control of cursor movement in both a row direction and an orthogonal column direction. Ferrari also teaches the horizontal and vertical direction such as the two X and Y array outputs being proportional to the zero and first moment of the 2-D pattern (column 11, lines 32-41 of the Ferrari reference). Therefore, Ferrari has taught that ratio between the movement of cursor and the path taken by a user's finger across an outer element is less at low speed or actuation frequency than at relatively high speed or actuation frequency.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporated the additional means of cursor movement of Ferrari in the watch device of Teres/Olsen to control a cursor on a display screen in accordance to the fingertip's movement speed. One having the ordinary skill in the art would have been motivated to do this to provide a more sensitive or high precision control to the cursor movement across a display screen.

Claim 11 recites all the limitations of claim 1 and adds the limitation of "second control means." The Teres/Olsen reference has taught a second control means such as a trackball being

incorporated into the mouse watch device (Teres figures 1-5; column 1-5; Olsen column 8, lines 58-59).

Claim 12 recites all the limitations of claim 11 and adds the limitation of "the second control means arranged in the top portion of case." The Teres/Olsen discloses the second control means are arranged in the top portion of the watch (Teres figures 1-5; column 1-5; Olsen figures 4-7, column 8, lines 58-59).

Claim 13:

The claim 13 is subject to the same rationale of rejection set forth in the claim 10 except additional claim limitations addressed below.

With regards to the limitation of "concentric zones," Olsen further discloses a mouse watch with cursor movements as claimed. See figures 4-5 and respective portions of the specification. Teres et al. further teaches a wristwatch device having concentric zones as shown in figure 3.

With regards to the limitation of "the second control means formed by touch sensitive sensor performed by means of a capacitive sensor supported by the outer element and located in the central region thereof," the Teres reference further discloses the claim limitation of the second control means formed by touch sensitive sensor performed by means of a capacitive sensor supported by the outer element and located in the central region thereof (Teres figures 1-5; column 1-5 because Teres's watch device also has the control means formed by touch sensitive sensor performed by means of a capacitive sensor supported by the outer element such as the glass of the watch and located in the central region thereof).

Claim 14 recites all the limitations of claim 11 and adds the limitation of "second control means arranged in a link of the wristband of the watch." The Teres/Olsen reference clearly teaches a second control means arranged in a link of the wristband of the watch (Teres figures 1-5; column 1-5; Olsen column 6, lines 1-67, column 7, lines 1-25, column 8, lines 58-59).

Claim 15 recites all the limitations of claim 11 and adds the limitation of "second control means formed by a push-button." The Teres/Olsen reference has taught a second control means such as keys 64 that are formed by a push-button (Teres figures 1-5; column 1-5; Olsen column 6, lines 1-67, column 7, lines 1-25, and column 8, lines 58-59).

Claim 16 recites all the limitations of claim 11 and adds the limitation of "second control means formed by a pressure sensor." The Teres/Olsen reference has taught a second control means such as a trackball formed by a pressure sensor (Teres figures 1-5; column 1-5; Olsen column 6, lines 1-67, column 7, lines 1-25, and column 8, lines 58-59).

Claim 17 recites all the limitations of claim 16 and adds the limitation of "pressure sensor formed by a piezoelectric crystal." However, Teres/Olsen further discloses the claim limitation of pressure sensor formed by a piezoelectric crystal (Teres column 5).

Claim 18 recites all the limitations of claim 11 and adds the limitation of "second control means formed by micro-contactor or small travel contactor." However, the Teres reference

teaches a second control means such as push buttons or any other new control devices that may be replaced by other sensors (Teres column 5, lines 4-16).

(10) Response to Argument

On Page 11 in the remarks, the Appellant argued with respect to the claim 1 and similar claims in substance:

(A) "In the present case, the Examiner has not given a fair reading as to what the Olsen Patent teaches as a whole because the Olsen Patent does not teach, or even suggest, disposing a sensor for controlling a cursor onto a time and date display. However, this is how the Examiner has used the teachings of the Olsen Patent."

In response to the arguments in (A), as clearly stated in the rejection set forth in the Advisory Action dated 10/22/2004, the Olsen reference is relied upon for the claim limitation of "the movement of cursor on a computer screen" which is different from what Appellant has argued "disposing a sensor for controlling a cursor onto a time and date display". With regards to the claim limitation of "the movement of cursor on a computer screen", Olsen teaches a mouse watch including control means for controlling the movement of cursor on a computer screen and touch sensitive sensors are built into the mouse watch to provide the computer mouse functions, i.e., the mouse watch can be used to detect the cursor movement on the display screen 26 (see for example, column 5, lines 42-67, and column 6, lines 1-67, column 7, lines 1-25). Thus Olsen teaches the claim limitation of "the movement of cursor on a computer screen."

With regards to the motivation for combining the Teres and Olsen references, Teres suggests providing a watch device formed by a matrix of photoelectrical sensors arranged on the bottom surface of the glass for identifying a manual action by a finger on the surface of the watch device to create a variation of an electrical quantity (e.g., Teres the Abstract) and data output ports such as the write recognition device (Teres figure 4 and column 4) for collecting the output signal as a result of finger motion on the watch device of Teres and Olsen discloses data ports (Olsen figure 1) for collecting the output signal from the microprocessor as a result of finger motion on the watch device of Olsen. Olsen further discloses a computer interface so that the output signal of Teres can be carried over to the computer for the control of a cursor in a display device. Therefore, Teres's watch device may have incorporated the computer interface 38 of Olsen (Olsen figure 1 and Teres figure 4) to control a cursor of the display screen. The motivation for combining the references is to incorporate the computer interface of Olsen in Teres to control a cursor of the display screen.

On Page 11-12 and 23-24 in the remarks, the Appellant argued with respect to the claim 1 and similar claims in substance:

(B) "In particular, the Examiner contends that Olsen teaches a computer interface (38) that can be incorporated into the watch taught by the Teres Patent (Office Action, dated April 19, 2004, page 3, line 2, to page 4, line 2; and the Advisory Action, dated October 22, 2004, page 2, lines 13-29). The Olsen Patent teaches a computer interface (38), as shown in Figure 3, but the computer interface is not the issue. It is the language of the present claims that is at issue, and each of the claims of the present application recite 'first control means for controlling the

movement of a cursor on a computer screen' is 'formed of a plurality of touch sensitive sensors…such that the display means are at least partially visible through the touch sensitive pads and the outer element.' The computer interface (38) of the Olsen Patent does not teach this feature."

In response to the arguments in (B), Appellant argues that the computer interface is not the issue, however, the computer interface is related to the motivation for combining the references.

Appellant also argues that the computer interface of Olsen does not teach a claim feature. This argument is irrelevant to the rejection set forth in above.

As to the claim limitations recited in the arguments, Teres teaches in column 2-5 the first control means formed by the touch sensitive sensors of the capacitive type and sensitive pads formed by electrodes deposited underneath the outer element. In the rejection of the claim 1 set forth in above, the Examiner has not relied upon Olsen to teach the claim limitation of touch sensitive sensors of the capacitive type and sensitive pads formed by electrodes deposited underneath the outer element. The Examiner only rely on the Olsen's computer interface to establish motivation for combining with Teres's watch device for providing signals for controlling the mouse's movement on a display screen. Namely, Olsen's computer interface is combined with the Teres's watch device so that the output signal of Teres can be carried over to the computer for the control of a cursor in a display device. *Therefore, Teres's watch device may have incorporated the computer interface 38 of Olsen (Olsen figure 1 and Teres figure 4) to control a cursor of the display screen.*

Moreover, Olsen teaches a mouse watch including control means for controlling the movement of cursor on a computer screen and touch sensitive sensors are built into the mouse watch to provide the computer mouse functions, i.e., the mouse watch can be used to detect the cursor movement on the display screen 26 (see for example, column 5, lines 42-67, and column 6, lines 1-67, column 7, lines 1-25). Thus Olsen teaches the claim limitation of "the movement of cursor on a computer screen." Appellant argues that Olsen does not teach some other claim limitations set forth in the claim 1. However, appellant's arguments are irrelevant in view of the ground(s) of rejection set forth in above because under 103(a), the combined references have to teach all the claim limitation, the individual reference does not have to teach every claim limitation.

On Page 13 in the remarks, the Appellant argued with respect to the claim 1 and similar claims in substance:

(C) "In summary, the Olsen Patent reasonably teaches a watch having a time and date display (60) that is separate from the pressure sensor (72) for controlling a cursor of a computer screen. The Olsen Patent does not teach, or even suggest, a watch having 'display means for at least one item of time related data' wherein the 'first control means for controlling the movement of a cursor on a computer screen' is 'formed of a plurality of touch sensitive sensors…such that the display means is are at least partially visible through the touch sensitive pads and the outer element as recited in claims 1, 10 and 13 of the instant invention."

In response to the arguments in (C), as clearly stated in the rejection set forth in the Advisory Action dated 10/22/2004, the Olsen reference is relied upon for the claim limitation of

"the movement of cursor on a computer screen." Appellant argues that Olsen does not teach some other claim limitations set forth in the claim 1. However, appellant's arguments are irrelevant in view of the ground(s) of rejection set forth in above because under 103(a), the combined references have to teach all the claim limitation, the individual reference does not have to teach every claim limitation. The Olsen reference does not have to teach all the claim limitations set forth in the claim 1. The Olsen reference is relied upon in the rejection is related to the claim limitation of "the movement of cursor on a computer screen."

On Page 16, 18-22, and 24-25 in the remarks, the Appellant argued with respect to the claims 1, 10, 13, 16 and similar claims in substance:

(D) "However, this is not a fair reading of the content of the Ferrari Patent. The Ferrari Patent fairly teaches calculating X and Y outputs (302), (303) using first-moment-coordinates (i.e., X and Y displacements) and zero-moment-value (i.e., Z-direction pressure), (col. 11, lines 23-41). Thus, the X and Y outputs (302), (303) are functions of displacement and pressure. The Ferrari Patent does not teach, or fairly suggest, that the speed of movement of a user's finger over the array of capacitance sensing cells is a variable used to control cursor movement. A person of ordinary skill in the art would realize that speed is a variable defined by the time rate of change of displacement. Any ratio dependent on displacement and pressure, as the Examiner contents is taught by Ferrari, neither defines a time rate of change of displacement (i.e., speed) nor would be dependent on speed….Second, none of the prior art references reasonably teach, or even suggest, (i) the 'means for detecting the speed of a user's finger over said outer element or the actuation frequency of successive sensors' as recited in claim 1; (ii) 'the direction of

movement of said cursor depends on the concentric zones actuated or two adjacent concentric zones which are actuated simultaneously' as recited in claim 10' (iii) the 'second control means for selecting an object shown on said screen or carrying out a command relating to said object, and wherein said second control means are also formed by a touch sensitive sensor performed by means of a capacitive sensor supported by the outer element and located in the central region thereof.' As recited in claim 13; and (iv) the 'second control means for selecting an object shown on said screen or carrying out a command relating said object…wherein said second control means are formed by said outer element associated with a pressure sensor' as recited in claim 16."

In response to the arguments in (D), it is noted that Ferrari discloses in Fig.5A-5G, 6-7, and column 11 the actuaction frequency of sensors as the user's finger or fingertip actuates/deactuates on a plurality of sensors wherein the X and Y outputs depend upon the displacement and pressure of the user's finger or fingertip on the touch-sensitive pads. The actuation frequency of sensors depends upon the user's rate of lifting/pushing sensors by a fingertip or moving the finger away/towards the sensors. Therefore, the cursor movement on a computer screen is controlled by the actuation frequency by the user's rate/speed/frequency of lifting/pushing fingertip, i.e., the user's speed of movement of a fingertip.

As to the claim 10, Teres et al. teaches a wristwatch device having concentric zones as shown in figure 3. Ferrari discloses the direction of movement of said cursor depends on the concentric zones actuated or two adjacent concentric zones which are actuated simultaneously because fingertip or finger's movement may cover two adjacent sensors among a plurality of sensors arranged in concentric zones which are actuated simultaneously.

As to the claim 13, the Teres reference further discloses the claim limitation of the second control means formed by touch sensitive sensor performed by means of a capacitive sensor supported by the outer element and located in the central region thereof. Teres teaches the claim limitation in figures 1-5; column 1-5 because Teres's watch device also has the control means formed by touch sensitive sensor performed by means of a capacitive sensor supported by the outer element such as the glass of the watch and located in the central region thereof.

As to the claim 16, the Teres and Olsen references have taught a second control means such as a trackball formed by a pressure sensor. See Teres figures 1-5; column 1-5; Olsen column 6, lines 1-67, column 7, lines 1-25, and column 8, lines 58-59.

On Page 18 and 25 in the remarks, the Appellant argued with respect to the claim 1 and similar claims in substance:

(E) "Furthermore, as shown above, the scope and content of the prior art (i.e., the Teres Patent, the Olsen Patent, and the Ferrari Patent) does not reasonably teach, or suggest, 'means for detecting the speed of a user's finger over said outer element or the actuation frequency of successive sensors' as recited in claim 1. Therefore, the Section 103 rejection standing against claim 1 over the combination of the Teres Patent, the Olsen Patent, and the Ferrari Patent is untenable and must be withdrawn because the scope and content of the prior art does not cover all of the claimed subject matter."

In response to the arguments in (E), it is noted that Ferrari discloses in Fig.5A-5G, 6-7, and column 11 the actuaction frequency of sensors as the user's finger or fingertip actuates/deactuates on a plurality of sensors wherein the X and Y outputs depend upon the

displacement and pressure of the user's finger on the touch-sensitive pads. The actuation frequency of sensors depends upon the user's rate of lifting/pushing sensors by fingertips or moving the finger away/towards the sensors. Therefore, the cursor movement on a computer screen is controlled by the actuation frequency of sensors by the user's rate/speed/frequency of lifting/pushing a fingertip.

Although, Teres and Olsen is silent to detecting the speed of a user's finger over the outer element or the actuation frequency of successive sensors, Ferrari teaches a portable device having a display screen by providing an electrical output signal for selectively controlling movement of a cursor across the display screen. Ferrari further teaches capacitive sensing cells arranged in a row/column array top to produce output signals for control of cursor movement in both a row direction and an orthogonal column direction. Ferrari also teaches the horizontal and vertical direction such as the two X and Y array outputs being proportional to the zero and first moment of the 2-D pattern (column 11, lines 32-41 of the Ferrari reference). Therefore, Ferrari has taught the relationship between the mouse movement on a computer screen and the user's fingertip movement speed or finger's movement speed wherein the ratio between the movement of cursor and the path taken by a user's finger across an outer element is less at low speed or actuation frequency than at relatively high speed or actuation frequency because the output quantities depend upon the actuation frequency of the sensors by the user's fingertips. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporated the additional means of cursor movement of Ferrari in the watch device of Teres and Olsen to control a cursor on a display screen in accordance to the fingertip's movement speed. One having the ordinary skill in the art would have been motivated to do this

to provide a more sensitive or high precision control to the cursor movement across a display screen wherein the high precision control depends upon the variable means such as the acutation frequency of sensors on the pads by the user's fingertips.

On Page 23 and 24 in the remarks, the Appellant argued with respect to the claim 1 and similar claims in substance:

(F) "…Consequently, the proposed rejection under 35 U. S. C. 103(a) based on the combination of the Teres Patent, the Olsen Patent, and the Ferrari Patent cannot teach, or even suggest, a watch having 'display means for at least one item of time related data' wherein the 'first control means for controlling the movement of a cursor on a computer screen' is 'formed of a plurality of touch sensitive sensors…such that the display means is are at least partially visible through the touch sensitive pads and the outer element' as recited in claims 1, 10 and 13 of the instant invention."

In response to the arguments in (F), it is clearly understood that Teres teaches a watch including the display means are at least partially visible through the touch sensitive pads and the outer element (See Teres figures 1-5; column 2-5).

Notwithstanding to Teres's teaching on this aspect of the claim limitation, Olsen has a sufficient disclosure with respect to the claim limitation argued by the Appellant.

For example, Olsen has taught a mouse watch 54 including display means for at least one item of time related data and having an at least partially transparent outer element covering the display means (figures 4-7, column 5, lines 65-67, column 6, lines 1-67, and column 7, lines 1-25). The Olsen reference has taught a mouse watch including control means for controlling the

movement of cursor on a computer screen and touch sensitive sensors are built into the mouse watch to provide the computer mouse functions, i.e., the mouse watch can be used to detect the cursor movement on the display screen 26 (see for example, Olsen column 5, lines 42-67, and column 6, lines 1-67, column 7, lines 1-25).

In column 6, lines 35-67 and column 7, lines 1-25 of Olsen, it is stated "the programmable computer housing 90 contains the programmable computer components (e.g., the programmable computer 86)…the programmable computer 86 has a display 104…the computer mouse housing 88 has a saddle 92 for coupling the programmable computer 86 to the computer mouse 84…the programmable computer housing 90 makes *physical* contact with the computer mouse housing 88." See also figures 6 and 7. Therefore, Olsen teaches that the outer element (i.e., the programmable computer housing 90) covers the display means (i.e., display 104) or forms an outer portion (i.e., the programmable computer housing 90 of figure 7) of these display means (i.e., display 104), and the sensitive pads of the touch sensitive sensors (i.e., motion sensor 104) are supported at least partially by the outer element (i.e., the programmable computer housing 90). As applied to the present application, Olsen discloses that the outer element covers the display means or forms an outer portion of these display means, and the sensitive pads of the touch sensitive sensors are supported at least partially by the outer element.

In column 5, lines 65-67 and column 6, lines 1-13 of Olsen, it is stated "the basic operation and construction of conventional motion sensors are well known and widely used in the computer pointing device art and accordingly, these aspects of the present invention will not be discussed further". Olsen teaches a pressure sensor (or a motion sensor in another embodiment) and a pressure sensor may be constructed by a *plurality* or an array of (compactly made) sensors

in his mouse watch device and therefore Olsen has inherently taught a plurality of sensors in his mouse watch device. Moreover, a pressure sensor (or a motion sensor) that is utilized in a point device acts like a plurality of sensors in functionality. A cursor device such as Olsen may embed a two or three axis pressure sensor in a button conformed to a finger, depending on the type of sensors are used, a pair of which may be used to provide information about two axes of displacement through which the location of an on-screen cursor or pointer is controllable. According to Olsen's teaching, the mouse watch device of Olsen may comprise a relatively high-resolution array of pressure sensors, small switches, or the like.

In column 7, lines 34-49 of Olsen, it is stated "various motions sensors, displays and data transmission techniques may be used…" Therefore, the pressure- or motion-sensitive pointing device 54 may be implemented as having a two-dimensional array of pressure/motion sensors, with each sensor corresponding to a coordinate position on a display screen wherein a finger is dragged across the array of sensors, and the direction of movement of the finger moves a pointer on the display screen in that direction and a button selector is pressed to select an object being pointed to by the pointer or to move a cursor displayed on the display screen to the location of the pointer or a pressure-sensitive selector located below the two-dimensional array of pressure sensors may be used, wherein the pressure-sensitive selector is activated when it is tapped at a pressure above a predetermined value greater than the pressure sensed by the two-dimensional array of pressure sensors.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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